ATTACHMENT E
SUMMARY OF PUBLIC COMMENTS DEPARTMENTAL RESPONSES FOR THE REVISION OF
Regulation 61-68, Water Classifications and Standards
January 9, 2014

I. Summary of Public Comments Received Following the Publication of the February 25, 2013 Notice of Drafting

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Added or revised text is shown by Underline.

Comment #1:

Reference & Topic:	***Commenter:***
C. Applicability of Standards – the use of Flow in the Regulation	The Honorable Senator Robert W. Hayes

Comments Received:

"It has come to my attention that the State's water quality standards are inconsistent with the *South Carolina Surface Water Withdrawal, Permitting, Use and Reporting Act* which became law in 2010. That law established minimum instream flow requirements 'to maintain the biological, chemical, and physical integrity of the stream taking into account the needs of downstream users, recreation, and navigation…' The only reference to flow protection in the State's water quality standards under Regulation 61-68 is the use of a 7Q10 flow, a ten year drought flow, as the aquatic life criteria. While a 7Q10 flow may be appropriately used for determining allocations for permits, it is not appropriate for protecting minimum flows and is inconsistent with the new law.

I urge the Department to use the ongoing Triennial Review process to update State water quality standards and include explicit protection of minimum flows consistent with the *South Carolina Surface Water Withdrawal, Permitting, Use and Reporting Act*. It is imperative that State law and water quality standards are consistent to avoid any misinterpretation and potential legal challenges."

Department Response to Comment #1

The Department agrees that there is a need for clarification and proposes the following changes to the regulation in Section C. Applicability of Standards.

C. APPLICABILITY OF STANDARDS.

1. The water quality standards are applicable to both surface waters and ground waters.

2. Any exception specified in this regulation is to be applied exclusively to the situation for which it was incorporated and not as a general rule applicable to all situations or waters of the State.

3. Uses in all waters shall be protected, wherever attainable, regardless of flow and classification of waters.

4. ~~Flow requirements, prohibitions, and exceptions.~~ Critical flows for determining permit effluent limitations and/or permit conditions or requirements including permit development such as wasteload allocations or load allocations in TMDL's will be calculated in accordance with the following:

    a. Aquatic life numeric criteria.

(1) The applicable critical flow conditions for aquatic life criteria shall be defined as 7Q10 or tidal conditions as determined by the Department. The numeric criteria of this regulation are not applicable to waters of the State when the flow rate is less than 7Q10 except as prescribed below.

(2) The Department shall consider conditions that are comparable to or more stringent than 7Q10 where appropriate to protect classified and existing uses, such as below dams and in tidal situations. Only those situations where the use of 7Q10 flows are determined to be impracticable, inappropriate, or insufficiently protective of aquatic life uses shall be considered as a situation in which the Department may consider other flow conditions.

(3) ~~The Department shall use the applicable critical flow conditions for the protection and maintenance of aquatic life for, but not limited to, the following: permit issuance, wasteload allocations, load allocations, and mixing zones.~~

~~(4)~~ NPDES Permit conditions shall be based on a critical condition analysis (e.g., critical flow, temperature or pH, or a combination of factors which would represent a critical conditions). Regarding ambient water temperature as a component of a critical condition analysis, the Department may consider less stringent limits during November through February based on a critical ambient water temperature during November through February.

b. Human health and organoleptic numeric criteria.

(1) The applicable critical flow conditions for human health shall be defined as annual average flow for carcinogens, 7Q10 (or 30Q5 if provided by the applicant) for noncarcinogens, or tidal conditions as determined by the Department. The applicable critical flow conditions for organoleptic criteria shall be defined as annual average flow or tidal conditions as determined by the Department. The numeric criteria of this regulation are not applicable to waters of the State when the flow rate is less than the annual average flow for carcinogens or 7Q10 (or 30Q5 if provided by the applicant) for noncarcinogens, except as prescribed below.

(2) The Department shall consider conditions that are comparable to or more stringent than annual average flow, 7Q10, or 30Q5 (if provided by the applicant) where appropriate to protect the classified and existing uses, such as below dams and in tidal situations. Only those situations where the use of annual average flow, or 7Q10, or 30Q5 (if provided by the applicant) are determined to be impracticable, inappropriate, or insufficiently protective of human health uses shall be considered as a situation in which the Department may consider other flow conditions.

~~(3) The Department shall use the applicable critical flow conditions for human health and organoleptic effects for, but not limited to, the following: permit issuance, wasteload allocations, load allocations, and mixing zones.~~

Comment #2: Percent of Flow

Reference & Topic:	***Commenter:***
Percent of waste stream flow vs. stream flow	Chester Sansbury

Comments Received:

"Wastewater discharge volumes to receiving waters may at times represent a significant and excessive percent of the total flow of the waterbody. A high percent of wastewater in a stream puts the waters at increased risk of standards violations such that public health and ecological conditions are threatened by temporary malfunction of treatment

processes and by substances in the discharge that are not monitored or regulated. Such substances can vary widely in their chemical category and can include things such as pharmaceuticals and artificial sweeteners. The impact on public health from drinking water use and the impact on indigenous aquatic populations as wastewater volumes and potentially harmful substances increase are not well known but common sense should tell one that the higher the amount of wastewater compared to natural flow in a stream the more potential for harm.

As part of your drafting process, I recommend that DHEC identify and assess concerns related to increased percentage of wastewater volume compared to instream natural flow and propose standards which adequately address this issue and protect instream quality. A possible standard is that wastewater flow should not exceed 50% of the natural flow of the receiving water body, with consideration given to waterbodies where instream flow is regulated or controlled by hydrological modifications.

Additionally, I request that you organize and convene a group of interested parties, generally known as "Stakeholders ", to present and discuss review of the standards and stream classifications and possible draft proposals for amendments.

Department Response to Comment #2

The Department considers a stream protected if the discharge meets the Standards. On numerous streams in the State, the 7Q10 flow is zero and several permittees discharge into dry ditches. In these cases, the wastestream flow at the end of pipe must meet the Standards. The Department has limited or no ability to deal with unregulated substances.

Comment #3:

***Reference & Topic**:*	***Commenter:***
Methylmercury	Gerritt Jöbsis, American Rivers on behalf of: Chris Starker, Upstate Forever; Bill Stangler, Congaree Riverkeeper; Andrew Wunderly, Esq., Charleston Riverkeeper; Dave Hargett, Ph.D., Conestee Foundation; Tim Rogers, Friends of the Edisto; Paul Lauren, SC Paddlesport Industry Assoc.; Kristina Wheeler, SC Nature Based Tourism Assoc.; Christine Ellis, Waccamaw Riverkeeper; Tonya Bonitatibus, Savannah Riverkeeper; Rick Gaskins, Catawba Riverkeeper Foundation, Inc.; Christopher Hall, Sierra Club; Jim Hopkins, Trout Unlimited; Karen Boylan, Preserving Lake Greenwood; Ann S. Timberlake, Conservaton Voters of SC; Larry Dyck, Ph.D., Shoreline Restoration Services; C.E. Lawton, Save Our Saluda; Blan Holman, Southern Environmental Law Center; Dana Beach, Coastal Conservation League; Ben Gregg, SC Wildlife Federation;

Comments Received:

The Department should establish a methylmercury water quality criterion that fully protects surface waters.

Department Response to Comment #3

The Department concurs and included our intentions in our Notice of Drafting filing in the State Register.

Proposed language addition in Section E.

R. 61-68.E., General Rules and Standards Applicable to All Waters

Add R.61-68.E.18. and 19. to read.

18. For the protection of human health, methlymercury concentration in fish or shellfish shall not exceed 0.3 mg/kg in wet weight of edible tissue.

a. NPDES permit implementation for mercury will require mercury monitoring, assessment and minimization for discharges that meet the following conditions;

(1) The receiving stream is impaired for methylmercury in fish or shellfish tissue, and;

(2) The discharge or proposed discharge has quantifiable levels of mercury (i.e., a result above the PQL).

b. The need for a total mercury effluent limit, for the protection of aquatic life and/or human health, pursuant to R.61-9.122.44(d), shall be based on a reasonable potential analysis of the discharge compared to the mercury standards for ambient waters.

19. The assessment of methylmercury in fish or shellfish for purposes of Section 303(d) listing determinations shall be based on the Department's Fish Consumption Advisories.

Comment #4:

***Reference & Topic**:*	***Commenter:***
Nutrient Standards	Gerritt Jöbsis and 19 additional organizations in SC identified in Comment #3.

Comments Received:

The Department should establish instream nutrient standards in order to more fully protect surface waters.

Department Response to Comment #4

The Department completed the process of promulgating numeric nutrient criteria for lakes of forty acres or more in 2001. These lake standards are implemented with TMDLs and permit limits on upstream dischargers to protect those downstream uses (lakes).

Currently, the Department has begun to gather the necessary additional data and information on South Carolina estuaries, with the goal of developing standards for those estuarine systems.

Comment #5:

***Reference & Topic**:*	***Commenter:***
Flow as a water quality standard	Gerritt Jöbsis and 19 additional organizations in SC identified in Comment #3.

Comments Received:

The Department should develop narrative and numeric standards for stream flow that would fully protect the waters of the State.

Regulation 61-68 should not set flows for aquatic life as the 7Q10 flow in conflict with the best scientific information.

Use of 7Q10 flows as a baseline to protect aquatic life conflicts with State statutory law.

Use of 7Q10 flows to protect aquatic life is in conflict with recommendations from EPA Region 4**.**

The Department should convene a stakeholder group to develop narrative and numeric standards for stream flow as part of the 2013 Triennial Review Process.

Department Response to Comment #5

The Department agrees that clarification is needed to remove potential inconsistency with the *Surface Water Withdrawal, Protection, Use and Reporting Act*. The Department concurs that there is potential to misinterpret the use of the term flow in the regulation. The language has been modified for clarification. See response to comment #1 above.

With the passage of the *Surface Water Withdrawal, Protection, Use and Reporting Act* and the promulgation of Regulation 61-119, it is the determination of the Department that the language changes proposed protect the waters of South Carolina. Therefore, additional stakeholder involvement is not planned at this time.

Comment #6 (comment received during Stakeholder Meeting)

Reference & Topic*:*	***Commenter:***
Flows	Gerritt Jöbsis, American Rivers (stakeholder meeting comment)

Comments Received:
Consider inserting the language "Flows shall support all intended uses."

Department Response to Comment #6

The Department appreciates the input. However, the determination of the Department is that the language changes proposed in Comment #1 protect the waters of South Carolina. No additional language needs to be added at this time.

Comment #7:

Reference & Topic*:*	***Commenter:***
Methylmercury	Jana Ackerman, Savannah River Nuclear Solutions

Comments Received:
Context
One of the key potential benefits of a properly revised approach based on methylmercury is that this mercury species bioaccumulates and is "directly" linked to fish tissue concentrations, an important and sensitive environmental endpoint. As you are aware, mercury chemistry in surface waters is complex and dynamic. The amount of methylmercury, and thus the level of contamination in fish, is determined by the biogeochemistry of the environment as well as the total amount of mercury present. High organic carbon and swampy environments generate the highest methylmercury fractions/concentrations. In SC, our regional biogeochemical conditions are well suited to mercury methylation in surface water so that the fraction of methylmercury in our stream and pond water is relatively high (i.e., above the national average). As a result, a large number of SC water bodies, even those with no point source discharges of mercury, are likely to have upper trophic level fish that are near or above the EPA recommendation of 0.3 mg/kg that protects recreational and subsistence fishers who consume foods from the same local water bodies repeatedly over many years.

Data and SRS Support for the Triennial Review
SRS has generated a substantial dataset of background mercury levels in fish tissue (stretching over a number of years in some cases) at numerous on-site and off-site locations, including some sites that are unaffected by point-source discharges. These data may be useful to help to establish background levels as you draft new standards. Additionally, some of the data might be useful in relating fish tissue concentrations to local water biogeochemical conditions and to local mercury discharges and regional mercury sources such as rainfall. The data also provide some site-specific bioaccumulation factors (BAFs) for SC and provide some information on long-term trends in fish mercury levels. Further, when translating the methylmercury goals into practice for SC, SRS experiences in fish and water sampling, when combined with the experiences of universities and other aquatic scientists/experts in the state, might be helpful in drafting water quality regulation revisions that are as protective, practical, and robust as possible. SRS has a large number of published reports and the associated databases that could be useful to you.

Graded Approach to Implementation
It is clear from the report and recommendations that the issue of mitigating the impacts of mercury at near-background levels is complex and does not lend itself to simple solutions that fit all states and localities. SC has historically done a good job in providing the public useful graded information on fish consumption advisories in various water bodies throughout the state (as documented in brochures and on the website). SRS would encourage continuing and even expanding this graded approach; e.g., by identifying how much fish, if any, can be safely eaten by different subpopulations (pregnant women, women of childbearing age and children age 6 to 16, and adult men and women).

Logistical Considerations
It was noted that much of the information in the 2010 EPA guidance document was brought forward from an earlier (2001) report. During our review, several instances were identified where technical developments in the intervening time period are not captured. For example, the methods for total mercury in fish tissue do not include the direct mercury analysis methods that have been validated and approved during that timeframe – these thermal desorption methods are relatively cost effective and robust and have undergone significant regulatory validation. To encourage maximum quality and technical value for the triennial review, the latest validated analytical methods in the drafted regulatory revisions should be included. The proposed updates have the potential to generate significant expenses; cost and logistics of implementation – sampling strategies, data interpretation and reporting, contingencies, etc., should be considered.

Department Response to Comment #7

The Department appreciates the comments. The Fish Consumption Advisory program is not a part of this regulation. Discharge permits require that permittees utilize the most up-to-date test methods. As methods are added or updated, they are incorporated into the information and will be made available.

Comment #8

Reference & Topic:	***Commenter:***
Bacteria standard	Andrew Fairey, Charleston Water System

Comments Received:

"As I described, this is a small item that came up as Charleston Water System is working with the Agency to re-issue our NPDES Permit. As definition # 29 is currently written in R.61-68, it does not align with EPA's use of geometric means with bacteria standards though out years of research and regulation.

Here is the definition as it is currently written in 61-68.

29. **Daily maximum (for bacterial indicators only)** means the highest arithmetic average of bacterial samples collected [for each of the bacterial indicator species (i.e., *E. coli*, enterococci, and /or fecal coliform)] in any 24 hour period during a calendar month.

I've also included the definition for the Monthly average, which does make use of the geometric mean.

42. **Monthly average (for bacterial indicators only)** means the calendar month (i.e., 28 days, 29 days, 30 days, or 31 days) geometric mean of all bacterial samples collected [for each of the bacterial indicator species (i.e., *E. coli*, enterococci, and/or fecal coliform)] during that calendar month.

I would propose this definition for the daily maximum:

29. **Daily maximum (for bacterial indicators only)** means the ~~highest arithmetic average~~ geometric of bacterial samples collected [for each of the bacterial indicator species (i.e., *E. coli*, enterococci, and /or fecal coliform)] in any 24 hour period during a calendar month.

I recognize that the Agency is making an allowance by evening allowing the averaging of bacterial samples collected within a 24 hour period, and I appreciate the flexibility that allows. But if we can get the geometric mean inserted in place of the arithmetic average, I believe that would be a more sound scientific position and in alignment with existing EPA requirements.

Department Response to Comment #8

For parameters other than bacteria indicators, the Daily maximum limit is expressed as the arithmetic average of samples in a given 24-hour period. The Department agreed the average of values taken over a 24-hour period to be considered as a Daily maximum value for bacterial indicators. The resulting language changes made for bacterial indicators were the culmination of months of work by Department staff, and stakeholders. There was consensus to move forward with the current language and the Department will not reopen this issue at this time.

Comment #9

***Reference & Topic**:*	***Commenter:***
Methylmercury	Mike Ruhe, Duke Energy

Comments Received:

"Duke Energy is supportive of the reasonable approach proposed by SC DHEC regarding methylmercury. Based on years of air quality monitoring and modeling, it is evident that the majority of mercury received in South Carolina is from air borne deposition, with the majority emitted from sources outside South Carolina. Therefore, it would be counterproductive to burden South Carolina NPDES permitted wastewater dischargers with onerous restrictions that they would have little or no ability to effectively remedy. However, Duke Energy does encourage SC DHEC to re-evaluate the receiving streams already listed as impaired for mercury before imposing mercury monitoring, assessment and minimization requirements on dischargers. This evaluation should consider the source of the mercury and the ability of the discharger to actually mitigate it."

Department Response to Comment #9

The Department appreciates the comments. Impaired water bodies are reviewed every two years as required in Sec

305(b) of the CWA. Impaired streams are then listed in the 303(d) report. The State of South Carolina will continue to address methylmercury and we will seek input from Stakeholders including Duke Energy as part of that effort.

Comment #10

Reference & Topic:	***Commenter:***
Flow	Mike Ruhe, Duke Energy

Comments Received:

"Aside from the proposed clarification regarding the use of critical flows in R.61-68.C(4)(a), Duke Energy believes that additional modifications of stream flows, including adopting narrative and numeric standards, is unwarranted at this juncture. In 2010, SC DHEC commenced a statewide initiative to evaluate the water use and withdrawal. During this process, broad stakeholder input was solicited and actively considered. The culmination of this initiative was the *South Carolina Surface Water Withdrawal, Permitting, Use and Reporting* Regulation (effective date June 22, 2012). Given the time and effort expended by SC DHEC and the many stakeholders to develop these regulations and the permitting process, Duke Energy recommends that SC DHEC refrain from considering additional flow requirements until these new requirements are given ample time to perform an objective evaluation to ascertain a true need for additional regulation.

Department Response to Comment #10

The Department concurs. With the passage of R.61-119, *Surface Water Withdrawal, Permitting, Use and Reporting* and the clarification proposed, the Department has adequately addressed concerns with regards to flow and ensuring both wastewater discharges and surface water withdrawals are allowed and remain consistent with water quality standards and protective of uses.

Comment #11

Reference & Topic:	***Commenter:***
Methylmercury implementation	Paul Calamita, Aqualaw

Comments Received:

I believe it makes sense technically and programmatically to express the mercury water column number as an annual average value. This will facilitate annual average limits for point sources. Such limits are appropriate as point sources are likely 1-4% of statewide mercury loadings with the rest coming from ambient sources. Thus, annual average limits with very limited monitoring (how many times do we need to measure 1-2%?) should be where we want to end up.

NC just did a mercury tmdl and permitting strategy which features annual average mercury limits (in the few cases where limits are necessary).

Department Response to Comment #11

The Department believes that details concerning permit limits such as whether they should be expressed as a daily maximum value or and annual average value should be determined at permit issuance on a case by case basis depending on the circumstances involved.

II. Summary of Public Comments and Department Responses Received Following the Publication of the October 25, 2013 Notice of Proposed Regulation

Comments were received from the following:

Upstate Forever
SC Water Quality Association
EPA Region IV
Chester Sansbury

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Text revised due to public comment is shown by Double Underline.
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Comment #1:

***Reference & Topic**:*	***Commenter:***
Methylmercury implementation	Paul Calamita, Aqualaw

Comments Received:

Commenter reiterates comments made during the Notice of Drafting comment period. (Comment #11 in Section I.)

Department Response to Comment #1

To further address their concerns, the Department has revised the language proposed as follows, adding the word "consistently" to R.61-68.E.18.a.(2) as follows:

Add R.61-68.E.18 and 19 to read.

18. For the protection of human health, methlymercury concentration in fish or shellfish shall not exceed 0.3 mg/kg in wet weight of edible tissue.

a. NPDES permit implementation for mercury will require mercury monitoring, assessment and minimization for discharges that meet the following conditions;

(1) The receiving stream is impaired for methylmercury in fish or shellfish tissue, and;

(2) The discharge or proposed discharge has consistently quantifiable levels of mercury ~~(i.e., a result above the PQL)~~ .

b. The need for a total mercury effluent limit, for the protection of aquatic life and/or human health, pursuant to R.61-9.122.44(d), shall be based on a reasonable potential analysis of the discharge compared to the mercury standards for ambient waters.

19. The assessment of methylmercury in fish or shellfish for purposes of Section 303(d) listing determinations shall be based on the Department's Fish Consumption Advisories.

Comment #2:

Reference & Topic:	***Commenter:***
Wastewater as a percent of stream flow	Chester Sansbury, SC League of Women Voters

Comments Received:

Commenter reiterates and expands on comments made during the Notice of Drafting comment period. (Comment #2 in Section I.)

Commenter expresses concern for the impact of higher amounts of wastewater compared to the natural stream flow.

He also refers to articles about newly emerging contaminants that to now have no water quality standards. Prescription drugs, artificial sweeteners, caffeine and other non-regulated chemicals.

Department Response to Comment #2

The Department bases water quality standards implementation in discharge permits to ensure the standards are met in streams at low flow or average annual flow, depending on the contaminant. Many streams have zero (0) low flow and for those parameters discharges meet the standards with no dilution. For those streams, the wastewater flow is the majority of flow.

The Department will continue to monitor data as emerging contaminants are studied and will implement limits and standards as the data supports.

Comment #3:

Reference & Topic:	***Commenter:***
Methylmercury, Nutrients, Flow	Chris Starker, Upstate Forever

Comments Received:

Commenter was one of the numerous conservation organizations that submitted comments during the Notice of Drafting period with American Rivers.

Commenter reiterates previous comments about methylmercury implementation, development of Nutrient criteria for all SC waters, and development of both narrative and numeric flow standards.

Department Response to Comment #3

These comments have been previously addressed in Section I. above. Please refer to the responses provided in Section I. Comment #3, Comment #4 , and Comment #5.

Comment #4:

Reference & Topic:	***Commenter:***
Methylmercury implementation	Annie Godfrey, US EPA Region IV

Comments Received:

Thank you for the opportunity to comment on the SCDHEC's revisions to R. 61-68. The Department is currently proposing to revise language related to flow and add EPA's recommended criterion for methylmercury. EPA has no comments on the flow language revisions at this time; however, the EPA does wish to comment with respect to the methylmercury criterion. While the Department is proposing to adopt the EPA recommendation of 0.3 mg/kg for methylmercury, there has been little in the way of accompanying implementation language, either in the Regulation or in supplemental documentation. Since this criterion is significantly different from other criterion, EPA strongly recommends that the Department lay out all implementation considerations at this time, rather than at some point in the future. These include NPDES permitting procedures and assessment procedures, such as reasonable potential procedures, limit derivation and monitoring considerations, for both new and existing facilities. The EPA has asked other states for similar information when such states have adopted the methylmercury criterion in order to assure that the criterion will be implemented correctly. We are available to work with you to develop these procedures.

Department Response to Comment #4

The Department appreciates the comments, insight and offer to help develop implementation procedures. The Department has begun discussions with stakeholders and will develop any needed implementation procedures prior to revision submission to EPA for approval.